



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Practical aspects of electrochemistry [S1TCh2>PAE]

### Course

Field of study	Year/Semester
Chemical Technology	3/6
Area of study (specialization)	Profile of study
–	general academic
Level of study	Course offered in
first-cycle	Polish
Form of study	Requirements
full-time	elective

### Number of hours

Lecture	Laboratory classes	Other (e.g. online)
0	15	0
Tutorials	Projects/seminars	
0	0	

### Number of credit points

1,00

### Coordinators

dr hab. Piotr Krawczyk prof. PP  
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### Lecturers

### Prerequisites

The student has an ordered knowledge of mathematics and physical chemistry. He has an ability to use the basic techniques in a laboratory scale. He can work individually and in teams and he also has a need for further education and enhance of professional and personal competences.

### Course objective

The aim of the course is to broaden the knowledge as well as reinforcing the skills to plan and conduct electrochemical processes used in practice.

### Course-related learning outcomes

Knowledge:

1. The knowledge in the field of basics of electrochemical processes -[ K\_W03, K\_W04],
2. The knowledge in the field of various electrochemical technologies -[K\_W13, K\_W15],
3. The knowledge in the field of related fields -[ K\_W12].

Skills:

1. The student can use in practice theoretical knowledge gained earlier -[K\_U08, K\_U15, K\_U16],

2. The student has the ability to selection of measurement techniques -[K\_U01, K\_U02],

Social competences:

1. The student understands the need for self-study and improvement of their professional competence -[K\_K01],
2. Student can act and cooperate in the group accepting different roles -[K\_K03].

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Rating of written answers within the subjects related to the theme of the practical classes.

Checking of current knowledge and practical skills, the ability to conduct experiments corectly during laboratory classes. Performing all laboratory exercises provided for the study program. Final mark of the laboratory classes will correspond to the mean marks of the previously performed written answers.

In the case of on-line classes, the knowledge check will be carried out in the form of a test consisting of 3 - 5 questions for each exercise and report for the given experimental data.

### Programme content

1. Electrode materials used in electrochemical technologies.
2. Electrochemical techniques used in practice in electrochemical processes.
3. The examples of electrochemical synthesis.
4. Corrosion and its electrochemical aspects.

### Course topics

none

### Teaching methods

Laboratory exercises, explanation, didactic discussion.

### Bibliography

Basic:

1. A. Kiswa - Elektrochemia cz. I i II (Jonika i Elektrodyka) WNT, W-wa, 2001,
2. R. Dylewski, W. Gniot, M. Gonet, Elektrochemia przemysłowa, Wyd. Politechniki Śląskiej, 1999,
3. A. Czerwiński, Ogniwa, akumulatory, baterie, WNT, W-wa, 1999,
4. C. G. Zoski praca zb., Handbook of Electrochemistry, Elsevier, 2007,
5. A. Ciszewski, Technologia chemiczna. Procesy elektrochemiczne, Wyd. Politechniki Poznańskiej, 2008.

Additional:

1. A.V. da Rosa, Fundamentals of Renewable Energy Processes, Elsevier/Academic Press, 1990,
2. H. Scholl, T. Błaszczuk, P. Krzyczmonik, Elektrochemia, Wyd. Uniwersytetu Łódzkiego, 1998,
3. J. Baszkiewicz, M. Kamiński, Korozja materiałów, Wyd. Politechniki Warszawskiej, 2006.

### Breakdown of average student's workload

	Hours	ECTS
Total workload	25	1,00
Classes requiring direct contact with the teacher	15	0,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	10	0,50